

Case 244. 40-year-old male owner of a plumbing, heating and cooling company died when the 12-foot deep excavation he was working in collapsed.

A 40-year-old male owner of a plumbing, heating and cooling company died when the 12-foot deep excavation he was working in collapsed. A residential homeowner contracted the decedent and his construction crew to replace an existing sewer line between the residence and the alley. The sewer line had become plugged and required replacement. Two excavations were dug using a front end loader with a backhoe attachment and hand shovels; one by the house and the other in the alley. The incident occurred in the excavation in the alley. The top of the excavation was approximately 10-feet long and 10-feet wide. The base of the excavation was approximately 6-feet long and 6-feet wide. There had been periodic rain showers during the time while employees performing work in the excavation. The soil type was firm clay. No supports or sloping of the excavation were noted by MIOSHA. Spoil piles were located directly next to the excavation. Approximately three yards of the west wall of the alley excavation had collapsed onto the decedent. The collapsed wall appeared to be approximately two to three feet underneath the alley. The west spoil pile was approximately 4-feet tall, 6-feet long, and 8-feet wide all which contained chunks of concrete. It appears that bystanders and work crew members attempted for 30-minutes to extricate the decedent prior to calling for emergency response. The decedent was found by emergency responders buried up to his chest when the walls of the excavation collapsed.

MIOSHA Construction Safety and Health Division issued the following Serious citations at the conclusion of its investigation:

Serious: GENERAL RULES, PART 1, RULE 114(1)

An accident prevention program was not developed, maintained, and coordinated with employees.

Employees engaged in excavation and sewer main activities.

Serious: EXCAVATION, TRENCHING, AND SHORING, PART 9

- **RULE 932(3)**

An employee shall not work in an excavation in which there is accumulated water or in which water is accumulating unless precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation, but may include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or the use of a safety harness and lifeline.

Employees engaged in excavation and sewage line repair were not adequately protected against the hazards posed by water accumulation in excavation next to the house.

- **RULE 932(5)**

An ongoing inspection of an excavation or trench was not made by a qualified person.

Employees engaged in excavation and sewer line repair activities did not have a qualified person on the jobsite.

INSTANCE A: Excavation next to the house. Spoils placed within 2 feet of excavation.

INSTANCE B: Excavation next to the house. Excavation dug below footing of the house was not protected from movement.

INSTANCE C: Excavation next to the house. No soil determination other than sight.

INSTANCE D: Excavation next to the house. Improper slope of excavation.

INSTANCE E: Excavation next to the house. Water in excavation without adequate measures to remove a hazard.

INSTANCE F: Excavation adjacent to the alley. Spoils placed within 2 feet of excavation.

INSTANCE G: Excavation adjacent to the alley. No soil determination other than sight.

INSTANCE H: Excavation adjacent to the alley. Improper slope of excavation.

INSTANCE I: Excavation adjacent to the alley. Concrete not supported or removed that could cause injury.

- RULE 933(1)

A tree, boulder, rock fragments, or other obstructions whose movement could cause injury to an employee were not removed or supported.

Employees engaged in excavation and sewer line repair were exposed to concrete in the alley that was not supported or removed.

INSTANCE A: Prior to the incident. Employee working in excavation next to the alley.

INSTANCE B: After the incident. Employees in the excavation next to the alley.

- RULE 933(2)

An excavation that an employee was required to enter did not have excavated and other material stored and retained not less than 2 feet from the excavation edge.

Employees engaged in excavation and sewer line repair were exposed to excavated and other materials less than 2 feet from the edge of the excavation.

INSTANCE A: Excavation next to a house.

INSTANCE B: Excavation adjacent to the alley. Prior to the incident, employee working in excavation next to the alley.

INSTANCE C: Excavation adjacent to the alley. After the incident, employees in the excavation next to the alley.

- PART 9, RULE 933(5)

An excavation 48 or more inches in depth and occupied by an employee was not provided with either a ladder extending not less than 3 feet above the top as a means of access or with a ramp

meeting the requirements of subrule (6) of this rule. Lateral travel along the wall of a trench to a ladder or other means of egress exceeded 25 feet.

Employees engaged in excavation and sewer line repair activities were not provided with a ladder to access the excavation.

INSTANCE A: Excavation next to a house.

INSTANCE B: Excavation adjacent to the alley.

- RULE 941(1)

The side of an excavation more than 5 feet deep was not sloped as prescribed in Table 1, unless supported as prescribed in this part.

Employees engaged in excavation and sewer line repair activities.

INSTANCE A: Excavation next to the house. Sides of excavation not cut to proper angle of repose. No shoring / no trench box. Excavation approximately 10 feet long, approximately 8 feet deep and its width at bottom is approximately 6 feet. Width at the top is approximately 10 feet. North side of excavation is approximately near vertical. South side of the excavation is approximately near vertical. East side of the excavation is approximate 72 degree angle. West side of the excavation is approximate 72 degree angle.

INSTANCE B: Excavation adjacent to alley. Sides of excavation not cut to proper angle of repose / no shoring / no trench box. Excavation approximately 10 feet long and approximately 12 feet deep. Width at bottom is approximately 6 feet. Width at top is approximately 10 feet. North side of excavation is approximate 80 degree angle. South side of excavation is approximate 80 degree angle. East side of excavation is approximate 80 degree angle. West side of excavation is approximate 80 degree angle.